Quantitative Research Data

National Family Opinion Research completed collection of the survey responses and data tabulation during the months of June and early July[4]. In the final count, the total number of responses received for the mail and the telephone surveys were as follows:

- Household Cleaners — 894 completes;
- Outdoor Pesticides — 846 completes; and
- Indoor Pesticides — 889 completes.

Statistical Testing of Data

When comparing different groups of data quantitatively, statistical tests are needed to help determine which data are meaningful and which are not. A two-tailed t-test, which compares the percentages or means of interest and the sample sizes, was used to determine whether differences existing among groups are significant on a statistical level.

This type of statistical testing is done based on the level of significance desired. Data are most frequently tested for significance at levels between 80% and 95%. The higher the level of statistical testing performed, the more likely it is that data differences detected in the study reliably reflect differences in the "real world." If a significant difference between two data points at the 95% confidence interval is found to exist, this means that the same study, if conducted 100 times, would show a significant difference reflected in its data at least 95 of those times. For the CLI study, data were tested at the 95% confidence level. In the raw data tables, significance was routinely tested. For each question asked, the mean, standard deviation, and standard error are also shown for each type of respondent.

Breakdown of CLI Data

The Core Group determined that it would be important to investigate whether significant differences existed among various groups of respondents. To this end, the raw data were broken down by various demographic categories and by ways in which respondents answered several key questions. These breakdowns were necessary so that analysis and comparisons could be made among different groups that responded to the questionnaire. For example, the gender category allowed the Core Group to determine if there is any significant difference between the numbers of males and females who read information on product labels. A total of seven demographic categories were made for the CLI study as follows:

- gender (male, female);
- household income (less than $10,000; $10,000-$24,999; $25,000-$49,999; and $50,000 or greater);

[4] A complete set of the quantitative data may be found in the EPA's Public Docket, Administrative Record AR-139. The availability of the data for public review was announced in a *Federal Register (FR)* notice (63 FR 57298, October 27, 1998).

- respondent education level (less than high school, high school graduate, and some college level education);
- minority status (yes, no);
- age of respondent (18-34, 35-54, and 55 or older);
- presence of children in the household (yes, no);
- dog/cat ownership (yes, no); and
- overall satisfaction level expressed with the label for that category, as indicated on the mail questionnaire.

In addition, seven categories were made to compare the ways in which respondents answered key questions of interest for the Core Group's analysis, as follows:

- frequency with which labels are read (respondents who read label section "occasionally or every time," or those who "do not read label sections occasionally or every time");
- ability to correctly identify most sections (respondents who were able to correctly locate label sections and those that could not correctly locate label sections two or more times);
- whether or not respondents looked for information about ingredients (respondents who said that they looked for ingredient information and those that said that they did not look for this information);
- preferred ingredient format (respondents' preference for four different ingredient information presentation options (for details on these options, refer to question 4c on mail questionnaires in Appendix 2-4);
- whether or not respondents looked for information about harmful effects of the product (respondents who said that they look for information on a label on the harmful effects of a label, and those that said that they did not);
- preferred labeling format (respondents who answered that they would "make no change to the current label format," those that said they would like to see "headings to highlight key facts," and those that said that they preferred the suggested "box format"); and
- geographic region (indication of where respondents were from for use by the Storage & Disposal Subgroup to see how respondents from states with strong household hazardous waste management programs ("strong HHW") answered questions in comparison to those respondents from other states ("other HHW")).

Data Precision

Based on a standard statistical measure for sample sizes of about 850 to 900 respondents, the data for the nationally representative sample of users for each of the three product categories are accurate to ± 3½% at the 95% confidence interval. This means that if the study were conducted 100 times and 50% of respondents gave a certain response, 95 out of those 100 tests would yield a result for that response if given by between 46.5% and 53.5% of respondents. As percentages move towards the extremes (i.e., closer to 0% and 100%), the precision of these data points will actually be higher. It is important to note that these precision measures refer to specific data points, and not to differences between data points. Precision for groups with smaller sample sizes will be lower.